

WHAT IS CLAIMED IS:

1. A transmission-roller supporting mechanism on a transmission apparatus of a wedge roller type comprising:

5 (i) input and output shafts which are mutually parallel and eccentric and are rotatably supported by a fixed part;

(ii) an input roller which is disposed coaxially to said input shaft and has a cylindrical rolling surface at an outer surface thereof;

10 (iii) an output ring which is disposed coaxially to said output shaft so as to surround said input roller and has a cylindrical rolling surface at an inner surface thereof;

(iv) three transmission rollers which have cylindrical transmission surfaces at outer surfaces thereof respectively and are placed in contact with the rolling surfaces of said input roller and
15 said output ring, in an unequally-spaced space generated between the rolling surfaces of said input roller and said output ring,

one of said three transmission rollers being a fixed roller supported rotatably by a fixed shaft fixed to the fixed part in parallel to said input and output shafts, which is placed at (I) a spatial
20 position where the unequally-spaced space is at the widest or (II) a spatial position where the unequally-spaced space is the narrowest,

the other two of said three transmission rollers being transmission rollers with the same diameter, which are placed in the middle of (I) the spatial position where the unequally-spaced space is
25 at the widest and (II) the spatial position where the unequally-spaced space is the narrowest and which are placed

symmetrically to a flat surface including said input and output shafts and the fixed shaft,

at least one of said two transmission rollers with the same diameter being a movable transmission roller whose center shaft is
5 not fixed; and

(v) a support roller which is disposed on the side where the unequally-spaced space is wider or narrower than that of said movable transmission roller and which has a cylindrical guide surface at an outer surface thereof,

10 said support roller being supported rotatably by a support shaft supported on the fixed part at a spatial position where the movement of said movable transmission roller is restricted in the space.

15 2. The transmission-roller supporting mechanism on a transmission apparatus of a wedge roller type according to claim 1, comprising:

a first moving mechanism of moving the spatial position of the support shaft of said support roller to (i) a spatial position where a
20 pre-pressure is applied on the contact surfaces between the transmission surface of said movable transmission roller and each of the rolling surfaces of said input roller and said output ring in the direction that said support roller pushes said movable transmission roller to the side where the unequally-spaced space is narrower, with
25 said support roller initially placed on the side where the unequally-spaced space is wider than that of said movable

transmission roller, or (ii) a spatial position where the pre-pressure is removed, so that the contact surfaces are out of contact with each other; and

5 a first applying mechanism of applying said movable transmission roller with an elastic force in the direction that the unequally-spaced space is wider.

3. The transmission-roller supporting mechanism on a transmission apparatus of a wedge roller type according to claim 1,
10 comprising:

a second moving mechanism of moving the spatial position of the support shaft of said support roller by a second applying mechanism to (i) a spatial position where a pre-pressure is applied on the contact surfaces between the transmission surface of said
15 movable transmission roller and each of the rolling surfaces of said input roller and said output ring and said support surface does not prevent said movable transmission roller from moving to the side where the unequally-spaced space is narrower along with the transmission of torque, with said support roller initially placed on
20 the side where the unequally-spaced space is narrower than that of said movable transmission roller, or (ii) a spatial position where the pre-pressure is removed from the contact surfaces between the transmission surface of said movable transmission roller and each of the rolling surfaces of said input roller and said output ring, so that
25 the contact surfaces are out of contact with each other; and

said second applying mechanism of applying said movable

transmission roller with an elastic force in the direction that the
unequally-spaced space is narrower.

4. The transmission-roller supporting mechanism on a
5 transmission apparatus of a wedge roller type according to claim 1,
comprising:

a third moving mechanism of moving said support roller by the
rotation of an eccentric shaft, wherein the support shaft of said
support roller functions as the eccentric shaft.

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5. The transmission-roller supporting mechanism on a
transmission apparatus of a wedge roller type according to claim 1,
comprising two pairs of support rollers corresponding to said two
transmission rollers with the same diameter, which allow the
15 transmission and cut-off of two-way rotational torque and a one-way
clutch function.